RAPESEED FROM CANADA

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. . . the world's largest exporter of this valuable oilseed

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ALBERTA
PACIFIC
GRAIN

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RAPESEED — A QUALITY OILSEED FROM CANADA

Oilseed crops have been grown commercially in Canada for more than 200 years, but rapeseed is a recent addition to the Canadian crop roster. In order to overcome a wartime shortage of oil for engine lubrication, rapeseed was first imported from Argentina and distributed to western farmers in 1942. Since that time the production of rapeseed has become an important industry. Canada is now the largest exporter of rapeseed in the world, shipping more seed each year than all other countries combined.

Rapeseed oil is still used to some extent as an industrial lubricant, but its chief application is as an edible oil, used in the manufacture of margarine, shortening, cooking and salad oils, and other products. The oil is removed from rapeseed by a crushing and solvent-extraction process, and the meal which remains is a valuable protein supplement for animal feed.

Climatic and soil conditions in the three Prairie Provinces of Canada — Alberta, Saskatchewan and Manitoba — are ideally suited to the production of high quality seeds with a high oil content. More than 700,000 acres (281,000 hectares) of rapeseed were under cultivation in the Prairies in 1964 and the potential is considerably greater, with increases indicated in domestic and export demands.

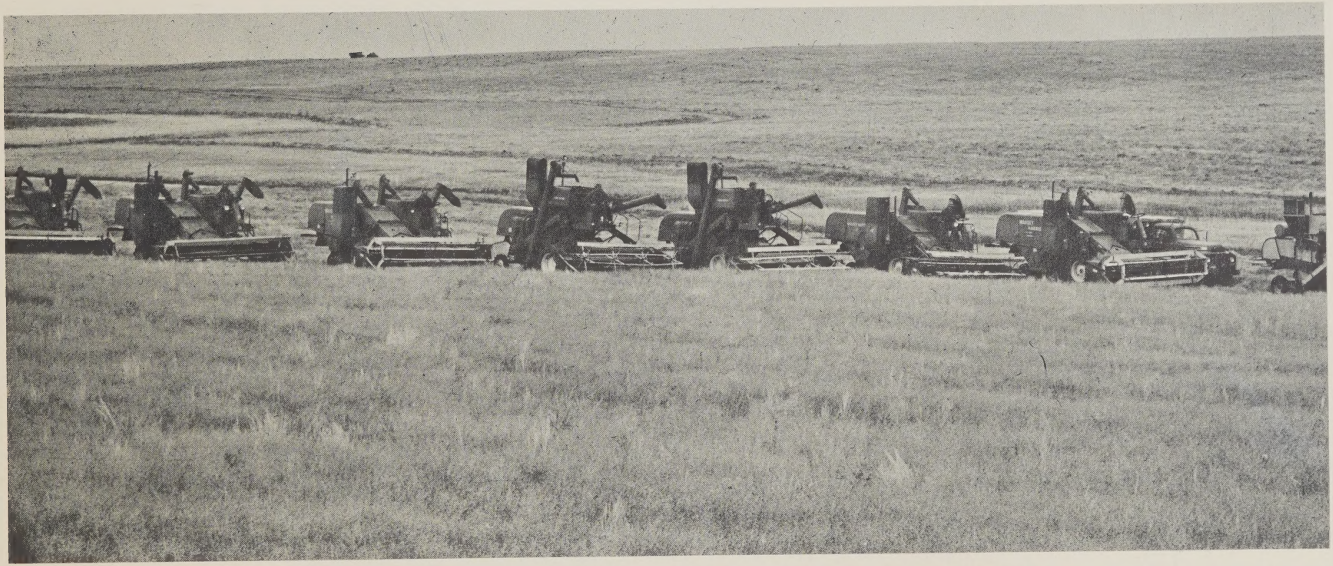
In the 1964 crop year, rapeseed production exceeded 11,000,000 bushels (245,000 metric tons), showing a remarkable increase over the 8,400,000 bushels (190,000 metric tons) of the previous year. The average oil content of the 1964 crop was 43.8 per cent and the average protein content was 42 per cent. Over 90 per cent of this production was exported in seed form.

Canada has a well developed oilseed crushing industry, and also a large margarine and vegetable oil refining industry. It has been estimated that rapeseed oil could displace one third or more of the imported oils used in Canada in the manufacture of margarine, shortening and other oil foods.

The grade, weight and cleanliness of Canadian rapeseed are assured by special legislation for the handling, inspection and grading of the

seed before marketing. An official certificate of grade accompanies each shipment. All sampling, grading, weighing and certification are done by Government officials of the Board of Grain Commissioners.

Trading in rapeseed futures was initiated on the Winnipeg Grain Exchange in September 1963 and the fact that more than 15,000,000



bushels were traded in 1964 reflects the active world interest in this commodity.

Success is never an accident. The success of Canadian rapeseed can be traced to diligent research, control and inspection— and to the enthusiastic acceptance of the edible oils derived from Canadian rapeseed among consumers the world over.

The countries of the world can look to Canada for quality leadership in this new crop — Canadian rapeseed.

VARIETIES OF RAPESEED

Two species of annual rape are grown as oilseed crops in Western Canada. The most commonly grown species in Canada is **Brassica campestris L.,** known as turnip rape in Europe and Polish-type rape in Canada. Varieties of the **Brassica napus L.** species are grown to a lesser extent. This species was originally introduced to Canada from Argentina and is known as Argentine-type rape in Canada but is identical to European summer rape. **B. campestris** matures earlier and is more frost resistant, making it a safer crop on the Canadian Prairies. Under good conditions the seed yield of **B. napus** is somewhat greater.

The most popular varieties grown are **Tanka, Nugget** and **Golden** (Argentine-type) and **Echo** and **Arlo** (Polish-type). **Golden** and **Nugget** were developed at the Saskatoon Research Station by selection from the original seed introduced from Argentina. **Nugget** yields more seed and 2 per cent more oil than **Golden,** and 4 per cent more than the strain from which it was selected.

The **Tanka** variety, released in 1962, was developed at the University of Manitoba by individual plant selection from **Golden.** Selection was based on seed size, yields of seed and other agronomic characteristics. In four years of testing, **Tanka** has consistently produced higher seed yields than that of **Nugget** and **Golden.** The number of pounds of oil produced per acre is also greater, and the protein content of the meal is better. The seedling growth of **Tanka** is more vigorous than that of **Nugget** and **Golden,** and the new variety has significantly larger seeds and pods.

Arlo was released by the Swedish Seed Association, and licensed for sale in Canada in 1958. **Arlo** is now being replaced by the new variety **Echo,** which was developed by Experimental Farm scientists at Indian Head, Saskatchewan, with co-operation from the Research Station in Saskatoon.

In four years of testing, **Echo** has shown high yield potential under favourable conditions and wide adaptability under less favourable

conditions. **Echo** has averaged as much as 250 pounds more seed per acre than **Arlo** in certain areas, and the amount of oil produced per acre is also higher. The protein content of the meal from this variety is good. It is expected that by 1967 most of the seed for export will be of the **Echo** variety.

RAPESEED OIL

For hundreds of years people in various parts of Europe and Asia have appreciated the value of rapeseed oil (also known as colza oil) as an edible product. In recent years it has become more and more popular with producers of margarine, shortening and salad and cooking oils in the United States and Canada. Today some companies rely on this oil only, instead of combining it with other vegetable oils.

Some industrial use is still made of rapeseed oil, but at present only a small part of the production is used in the manufacture of lubricating fluids.

Canada's continuing research indicates an ever-increasing use of rapeseed oil. Producers of cooking and salad oils and other oil-based food products are widening their use of this oil. The nutritional and digestibility standards are high, in keeping with Canada's carefully guarded reputation for quality. The purity of the product and its attractive price will continue to increase the demand.

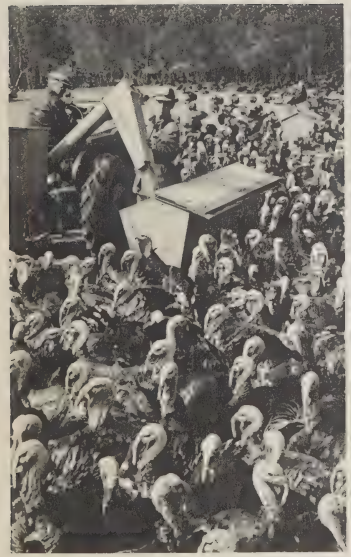
RAPESEED MEAL

When the oil is extracted from rapeseed, the remaining by-product is a meal high in protein content which can be used in the recommended proportions in livestock and poultry rations. Rapeseed meal, with a protein content of 38 per cent, is priced well below other plant-protein supplements. Experiments in recent years have demonstrated that, used under proper conditions and controls, the addition of rapeseed meal to livestock feed results in significant weight gains.

Rapeseed meal ranks between soybean and linseed meals in protein content, and contains slightly more crude fibre than typical soybean meal. When processed under rigid temperature controls it contains protein of high quality, with good lysine content. The biological value of the protein in rapeseed is almost as high as that of soybean meal.

Rapeseed meal is richer in choline and niacin than soybean meal, similar in riboflavin, and somewhat lower in pantothenic acid and thiamine contents. Its calcium and phosphorus contents compare favourably with those of soybean and linseed meal.

Intensive research has led to substantial improvements in methods of processing rapeseed meal in recent years. A higher proportion of the nutrient content can be retained with modern processing methods, and detoxification techniques have also advanced significantly. The quality of rapeseed meal is steadily improving and the continuing high standard of the product is assured.



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1. Turkeys may be given rations containing rapeseed meal from the age of 8 weeks. Finishing rations with up to 22.8 per cent rapeseed have resulted in better weight gains and carcass finish than for birds fed control diets.

2. Small amounts of rapeseed meal in the diet of ewes have been found to increase the weight of ewes and lambs and to improve the quality and quantity of the wool.

3. Laying hens may be fed rations containing up to 10 per cent rapeseed meal, with good results in egg production, quality and hatchability.

4. Experiments have shown that 10 per cent rapeseed meal is a satisfactory protein supplement in the rations of dairy cattle. Indications are that it is also suitable for beef cattle.

MARKETING OF RAPESEED

The marketing of rapeseed has evolved with the industry. During the early stages of development, rapeseed production was almost entirely under contract – producers negotiated agreements with processors and merchants before sowing the crop. However, a non-contractual market has recently emerged. Large grain co-operatives have organized a pooling arrangement where producers deliver their rapeseed to the co-operatives. They receive an initial payment upon delivery and a final payment after the crop has been sold. Significant quantities of rapeseed are handled this way each year. Some producers also sell non-contracted quantities of rapeseed privately to interested firms.

Of considerable importance in the merchandising of rapeseed is the improved grading system recently put into effect. Rapeseed, like wheat, is marketed by statutory grades established under the Canada Grain Act. Grading is done by Federal Government inspectors. The recent amendment to the Act has provided a more concise classification comprising three main grades of seed.

Statutory grades of rapeseed are based upon weight, soundness, colour, condition, odour and impurities – expressed as dockage. Dockage includes foreign material which may be, but has not been, separated by cleaning, and foreign material inseparable but conspicuous. The Board of Grain Commissioners for Canada has defined rapeseed containing less than 10.5 per cent moisture as dry.

For the accommodation of importers, brokers, shippers and others, a final certificate of grade must be issued immediately upon loading for export. This does not allow sufficient time for testing percentage of oil, acidity of the oil and presence or absence of inconspicuous weed seeds. Consequently, these characteristics are not included in the grade definitions.

Since the definitions may cover only part of the exporter's contractual requirements, certification of oil content and content of weed seeds is supplied by the exporter if required, normally within a short time of shipment. Such documentation may be the basis of price adjustments.

With few exceptions the Canadian exporter sells basic No. 1 Canada, with a specified minimum oil content, and as 98 per cent pure rapeseed. Discounts are then established for lower grades and extensive foreign matter.

Continuous research – by Canada's Department of Agriculture, the National Research Council, universities and processors – has resulted in both biological and technical advances in the industry. Qualitative and quantitative improvements in rapeseed have been achieved and further improvements may be expected as the research program continues. Technological advancement has allowed the industry to develop more efficient processing methods for better quality oils and meals.

Particular care has been exercised by the Canadian Government and by the exporting trade to provide the highest quality, uniform product

STANDARD OF QUALITY

Statutory Definitions of Grades of Rapeseed Amendment to Schedules One and Two, Canada Grain Act, Effective August, 1, 1962.

CANADA GRADE RAPESEED	MINIMUM POUNDS PER BUSHEL	DEGREE OF SOUNDNESS	STANDARD OF CLEANNESS
No. 1	52	Reasonably sound; cool and sweet; may contain not over 3 per cent damaged seeds including not over 0.1 per cent heated. Of good natural colour.	May contain not more than 1 per cent of other seeds that are conspicuous and that are not readily separable from rapeseed, to be assessed as dockage.
No. 2	50	Cool and sweet; may contain not over 10 per cent damaged seeds, including not over 0.2 per cent heated.	May contain not more than 1.5 per cent of other seeds that are conspicuous and that are not readily separable from rapeseed, to be assessed as dockage.
No. 3	48	May contain not over 20 per cent damaged seeds, including not over 0.5 per cent heated. May have the natural odour associated with low quality seed, but shall not be distinctly sour, musty, rancid, nor have any odour that would indicate serious deterioration or contamination.	May contain not more than 2 per cent of other seeds that are conspicuous and that are not readily separable from rapeseed, to be assessed as dockage.

for the world market. The seed is continuously inspected until the time it is exported. In this way Canada has been able to achieve and maintain an enviable record in supplying quality rapeseed.

CANADIAN EXPORTS OF RAPESEED*

*calendar year	1961		1962		1963		1964	
	metric tons	$	metric tons	$	metric tons	$	metric tons	$
U.K.	2,510	300,537	1,600	179,680	1,620	164,294	2,085	264,516
Belgium-Luxemburg	5,700	666,464	2,450	279,195	–	–	–	–
France	10,200	1,165,864	7,640	864,127	–	–	–	–
West Germany	12,700	1,373,669	13,000	1,241,330	210	34,302	210	29,702
Italy	36,000	3,904,795	80,700	8,871,854	17,100	1,822,512	2,950	359,837
Netherlands	16,800	1,912,647	28,000	2,985,864	2,003	265,260	8,500	1,055,000
Algeria	21,000	2,275,494	10,900	1,278,600	12,400	1,324,200	–	–
Japan	18,000	2,221,358	47,000	4,893,760	102,000	12,258,507	56,200	6,924,000
U.S.A.	210	28,710	620	72,335	330	37,313	2,800	339,521
Taiwan	–	–	–	–	1,900	250,036	3,850	473,984
Finland	–	–	–	–	–	–	2,005	251,905
Spain	–	–	–	–	–	–	1,850	111,631
India	–	–	–	–	–	–	2,560	340,000
TOTAL	**123,120**	**13,849,538**	**191,910**	**20,666,745**	**137,563**	**16,156,424**	**83,010**	**10,150,096**

About 40,000 m.t. of rapeseed were also sold to Pakistan, Czechoslovakia and Poland, but were not shipped before the end of 1964.

For further information
about Canadian rapeseed,
write to:
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